

IMPACT OF 99 CENT PRICING

Prepared for
PHILIP MORRIS, U.S.A.
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M A N A G E M E N T S C I E N C E A S S O C I A T E S , I N C .

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EXECUTIVE SUMMARY

- On average Industry Volume increases by 2%. Discount accounts for most of this as it increases by about 4%. Premium volume shows no measurable growth.
- Share redistribution from Premium to Discount does occur (.50).
- Marlboro is relatively less vulnerable than other Premium brands to 99¢ pricing.
- Volume and share response varies by the number of brands in the store at 99 cents. Share contribution of 99 cent brands demonstrates a similar relationship.
- The positive effect of 99 cent pricing on Discount Share increases over the first 5 weeks of 99¢ pricing.
- Range of residuals

Industry Volume: 86% of residuals are between -20% - +20%

Premium Share: 88% of residuals are between -5.4 to +5.4 share points

Discount Share: 88% of residuals are between -5.4 to +5.4 share points

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IMPACT OF 99 CENT PRICING

DATABASE DESCRIPTION

Source: 450 Nielsen Convenience Stores

Time: 46 Weeks from October 16, 1993 - August 27, 1994

Brands:	Industry	B&H	Cambridge	Monarch
	Premium	VSlims	Doral	Best Value
	Discount	Winston	Misty	RJR P/L
	Marlboro	Camel	Style	PM P/L
	Merit	Salem	Basic	Amer P/L
	Newport	GPC	Lig P/L	

Measures: Net Pack Price

Total Sales

Causal: # of UPC's by brand w/Free offer Incentives, Mail, Sweepstakes, Refund

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METHODOLOGY

A multivariate regression model was used to estimate the impact of 99¢ incidence on the different brands. The model was adjusted for cross sectional and trend effects.

Volume:

LN (Brand Volume) = f [99¢ incidence, Gap,
Store trends,
Store level adj,
Causal Dummies,
Individual brand price reductions,
of brands at 99¢ incidence *,
Week of 99¢ incidence*,
Contribution of brands at 99¢*]

Brand Share = f [99¢ incidence, Gap,
Store trends,
Store level adj,
Causal Dummies,
Individual brand price reductions,
of brands at 99¢ incidence *,
Week of 99¢ incidence*,
Contribution of brands at 99¢*]

* Run in separate Models

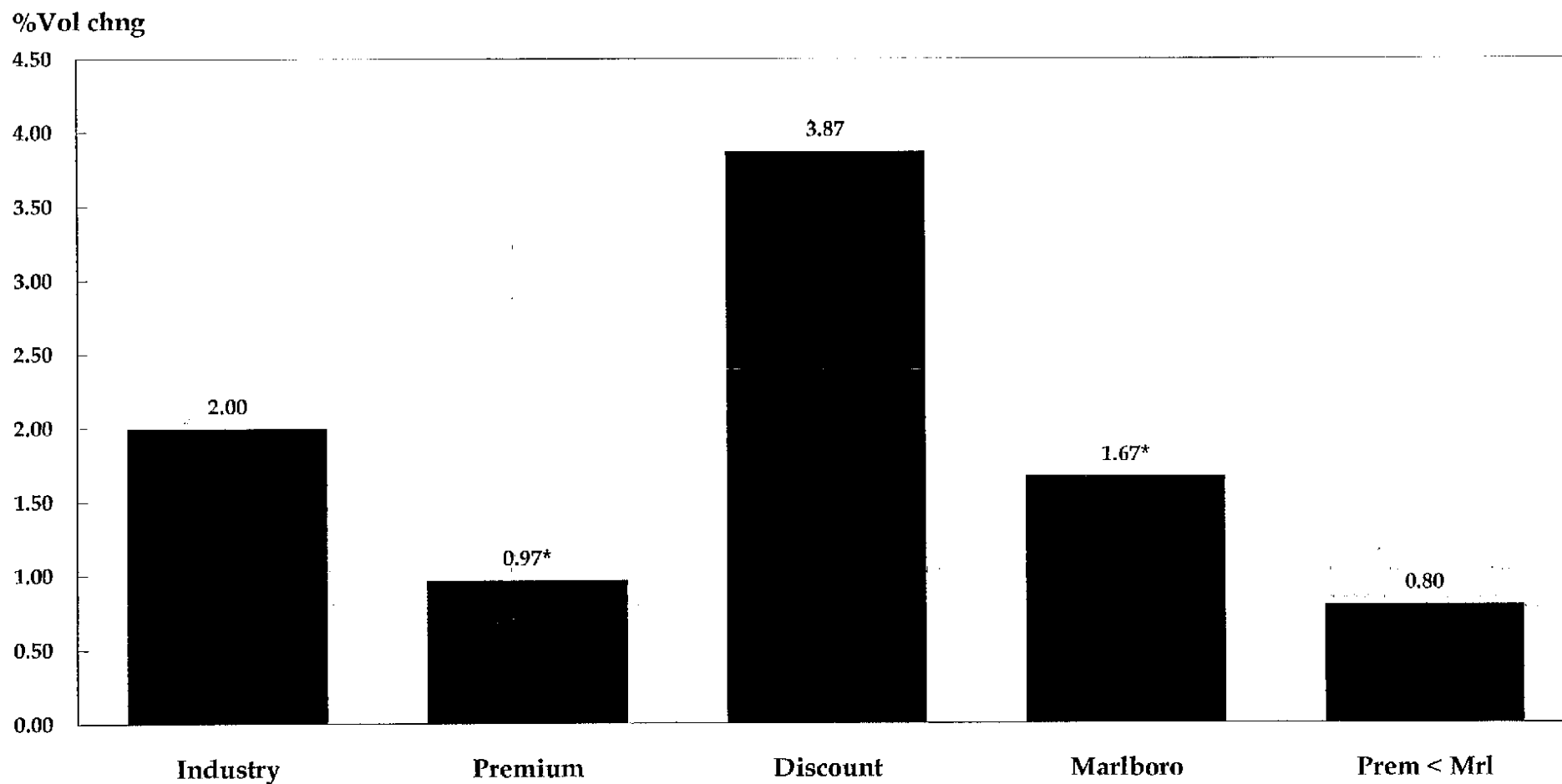
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FINDINGS

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IMPACT OF 99 CENT PRICING

Percent Volume change due to 99 cent incidence

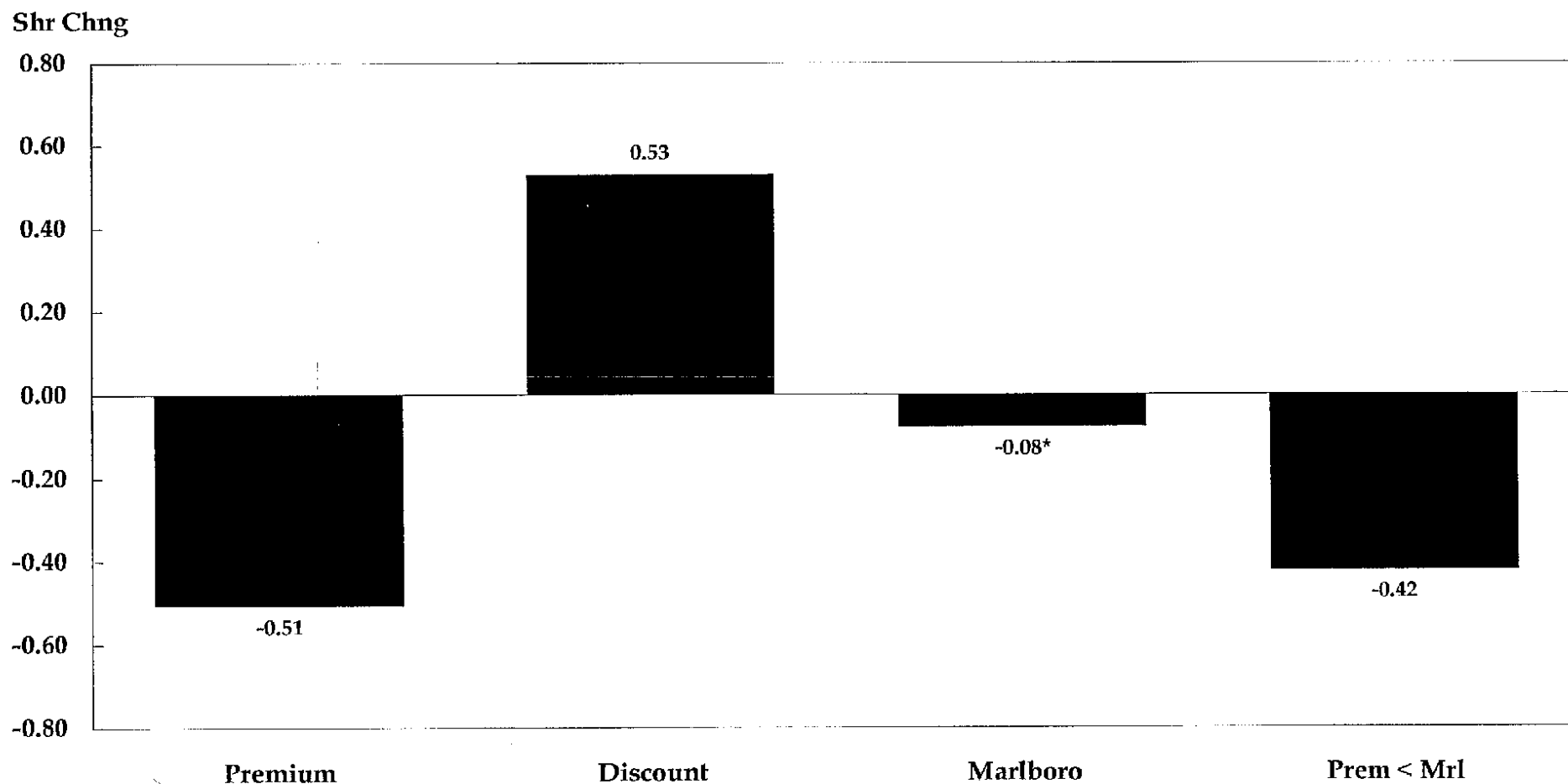


* Statistically insignificant at 90% confidence

Source: Nielsen 450 C-Stores

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IMPACT OF 99 CENT PRICING **Absolute share change due to 99 cent incidence**



* Statistically Insignificant at 90% confidence

Source: Nielsen 450 C-Stores

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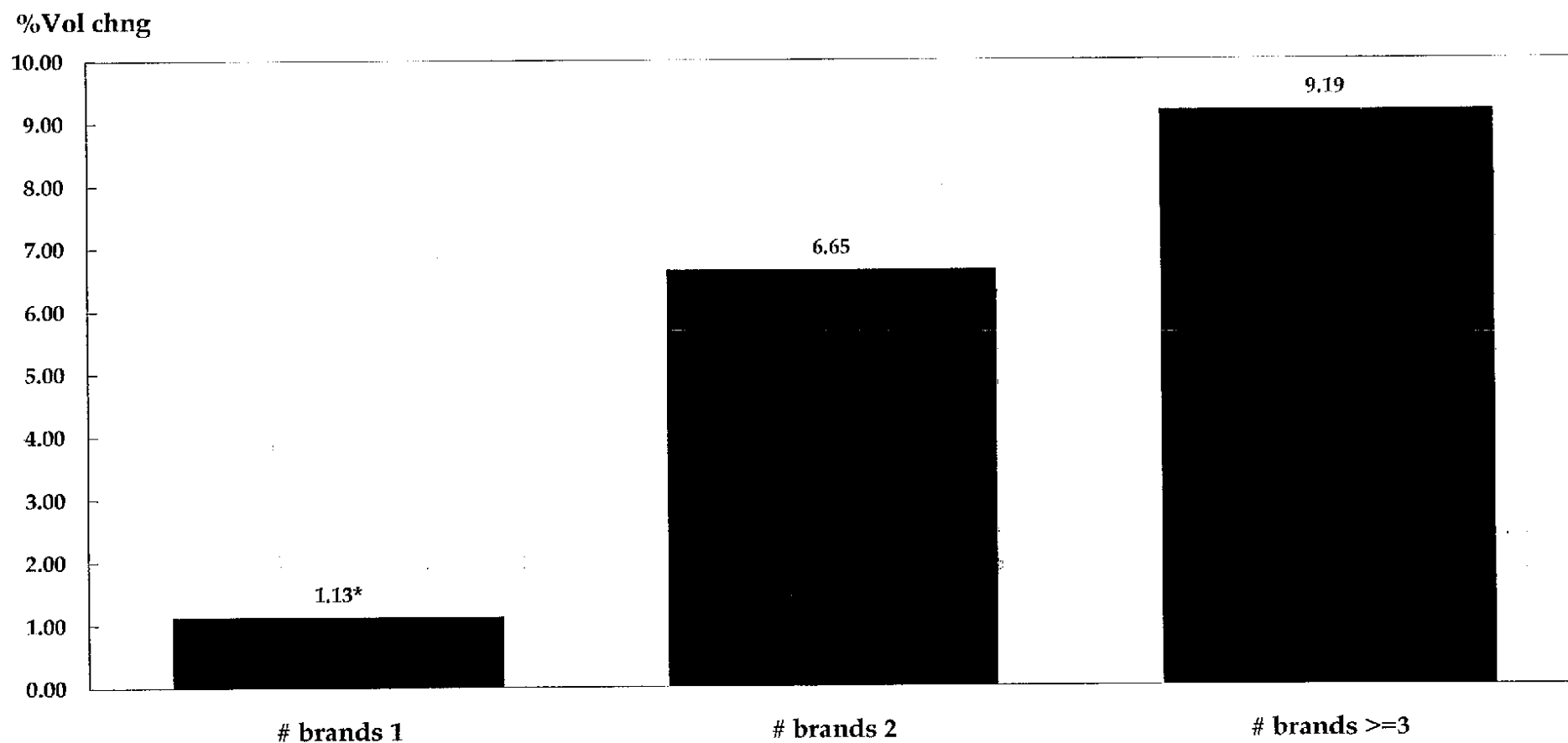
IMPACT OF 99 CENT PRICING

NUMBER OF BRANDS AT 99 CENTS

- Number of brands at 99 cents is a major factor in the magnitude of volume and share changes
- Presence of 3 or more brands at 99 cents causes significant shifts between Premium and Discount Share (2.88)
- Other Premium brands lose more than Marlboro

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**IMPACT OF 99 CENT PRICING
TOTAL INDUSTRY VOLUME**
Percent Volume change by number of brands at 99cents

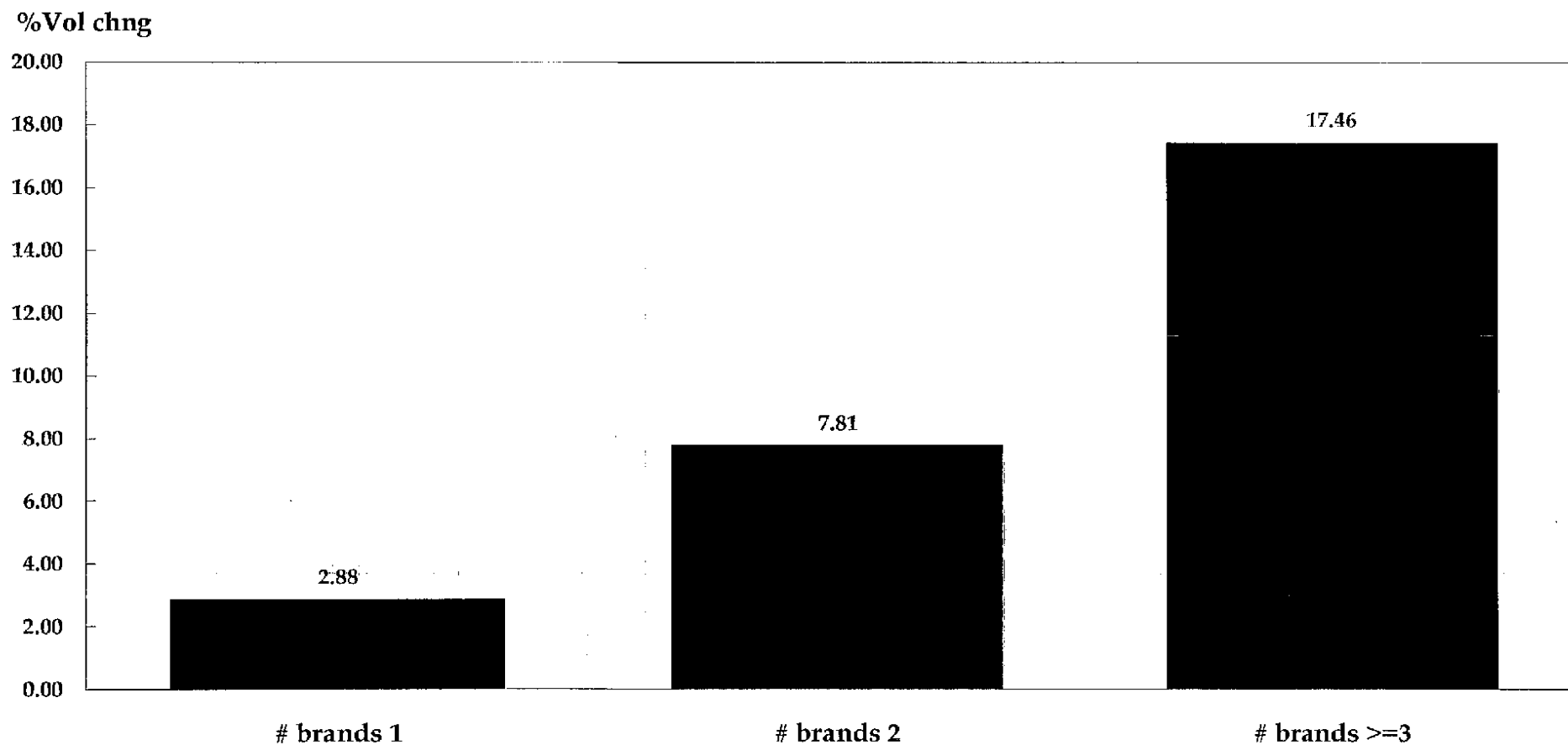


* Statistically insignificant at 90% confidence

Source: Nielsen 450 C-Stores

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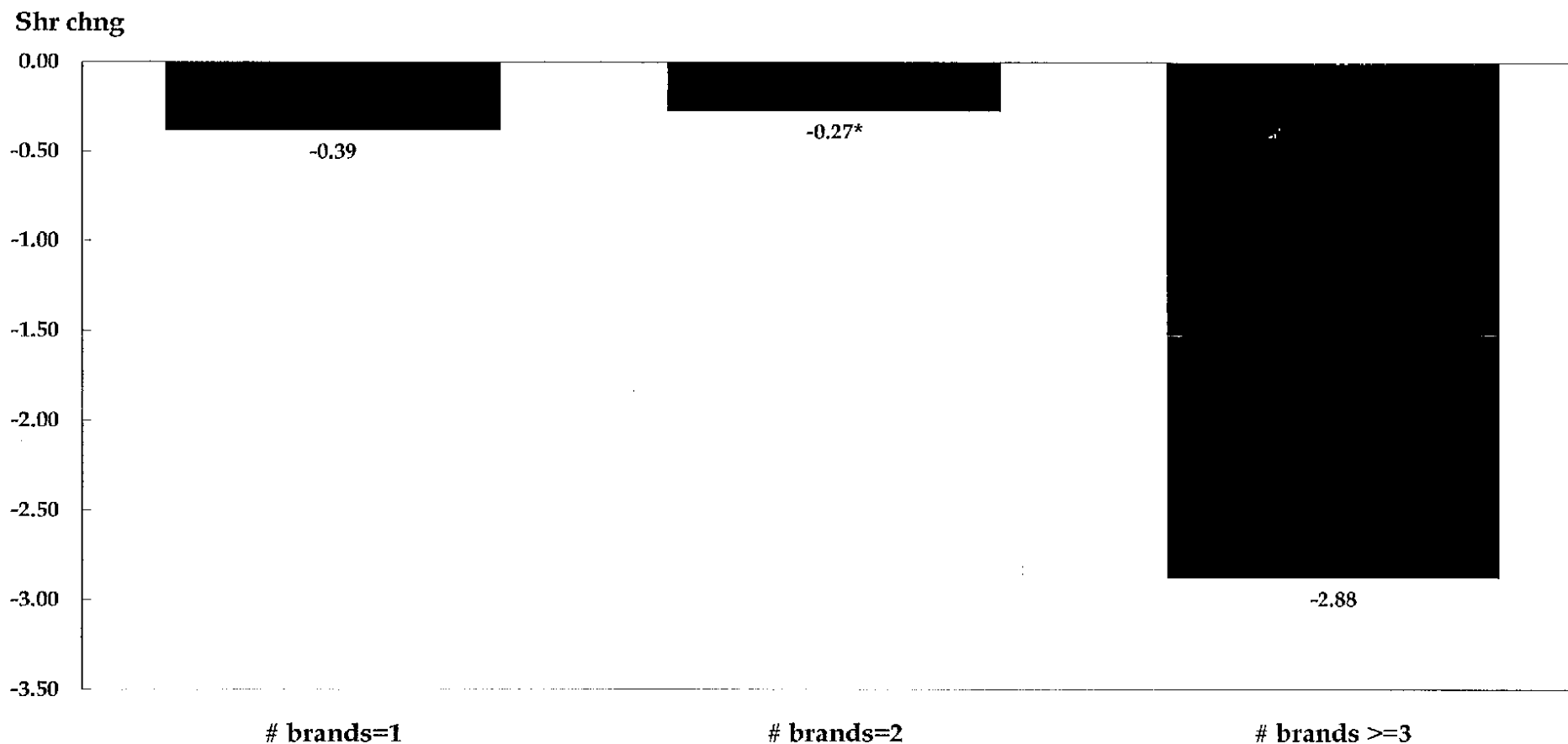
**IMPACT OF 99 CENT PRICING
TOTAL DISCOUNT VOLUME**
Percent Volume change by number of brands at 99cents



* Statistically insignificant at 90% confidence
Source: Nielsen 450 C-Stores

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**IMPACT OF 99 CENT PRICING
TOTAL PREMIUM SHARE**
Absolute share change by number of brands at 99cents

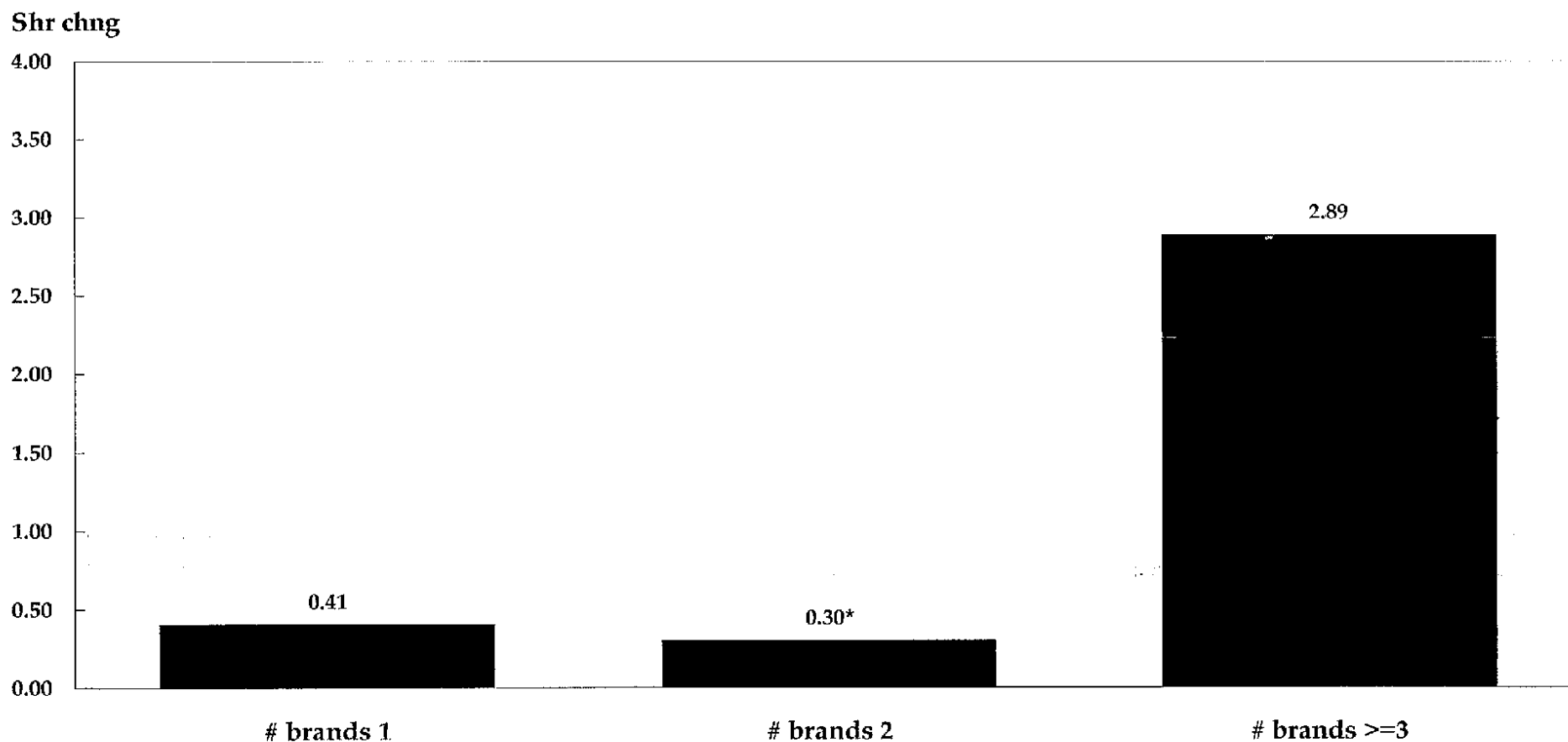


* Statistically insignificant at 90% confidence

Source: Nielsen 450 C-Stores

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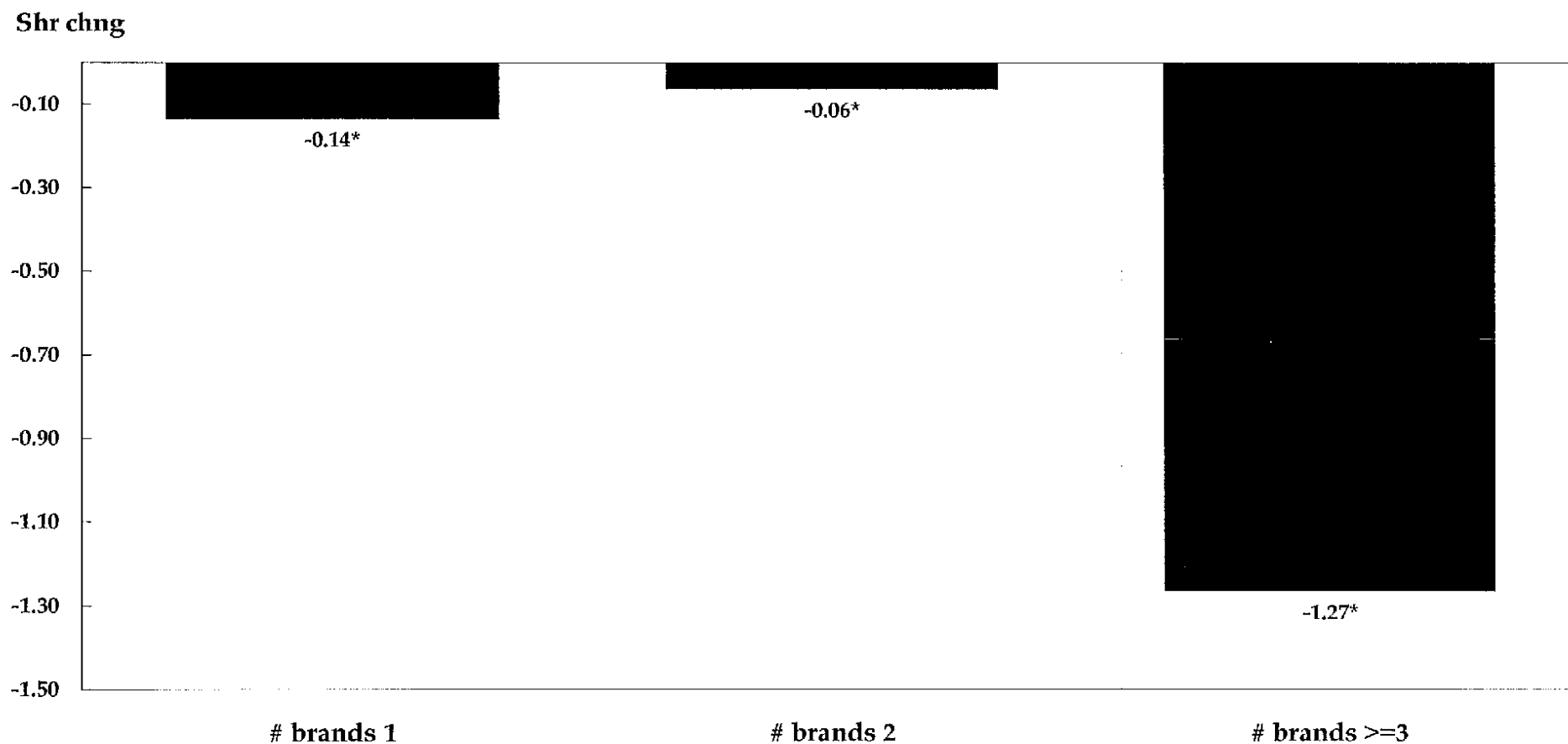
**IMPACT OF 99 CENT PRICING
TOTAL DISCOUNT SHARE**
Absolute share change by number of brands at 99cents



* Statistically insignificant at 90% confidence
Source: Nielsen 450 C-Stores

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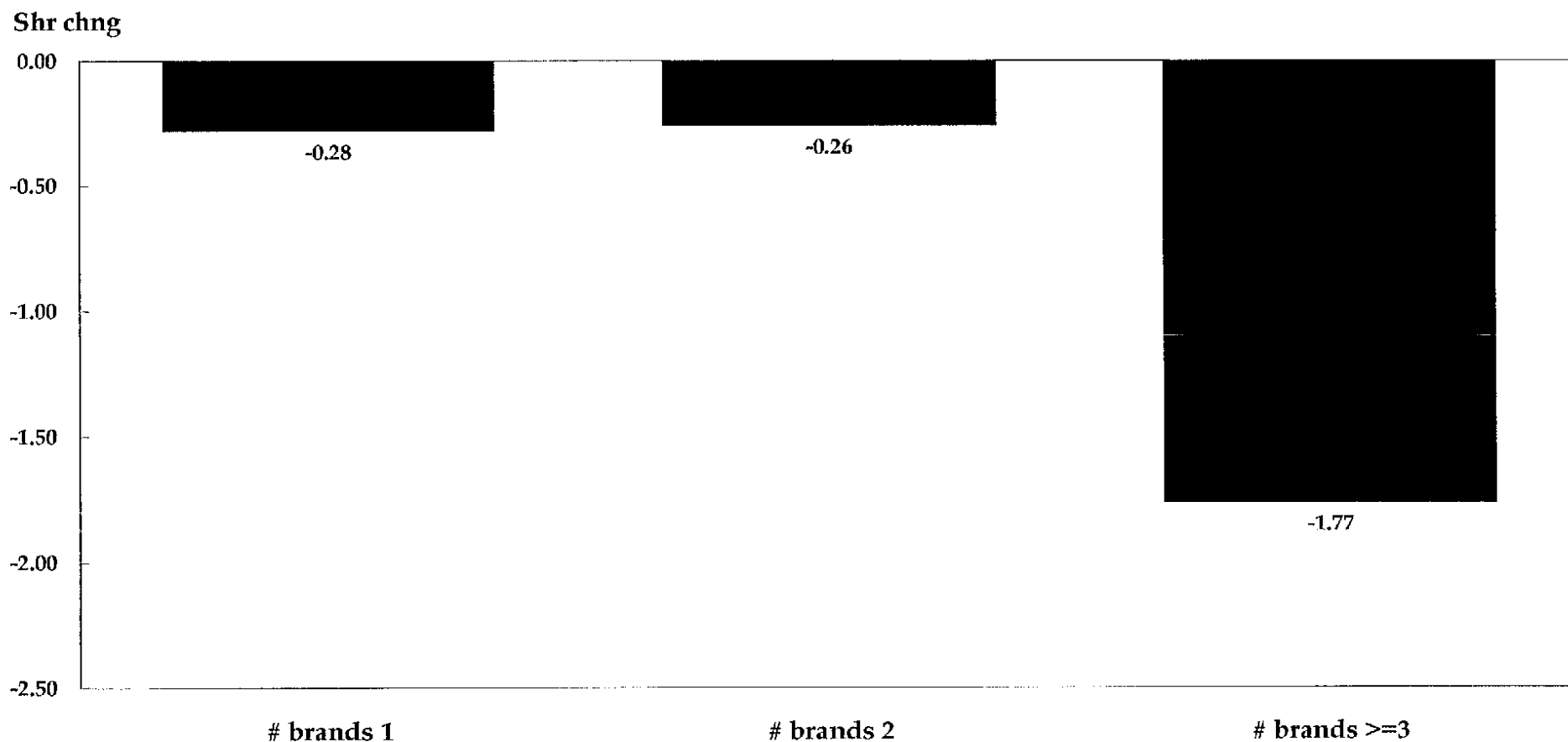
IMPACT OF 99 CENT PRICING TOTAL MARLBORO SHARE Absolute share change by number of brands at 99cents



* Statistically insignificant at 90% confidence
Source: Nielsen 450 C-Stores

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IMPACT OF 99 CENT PRICING
TOTAL PREMIUM LESS MARLBORO SHARE
Absolute share change by number of brands at 99cents



* Statistically insignificant at 90% confidence

Source: Nielsen 450 C-Stores

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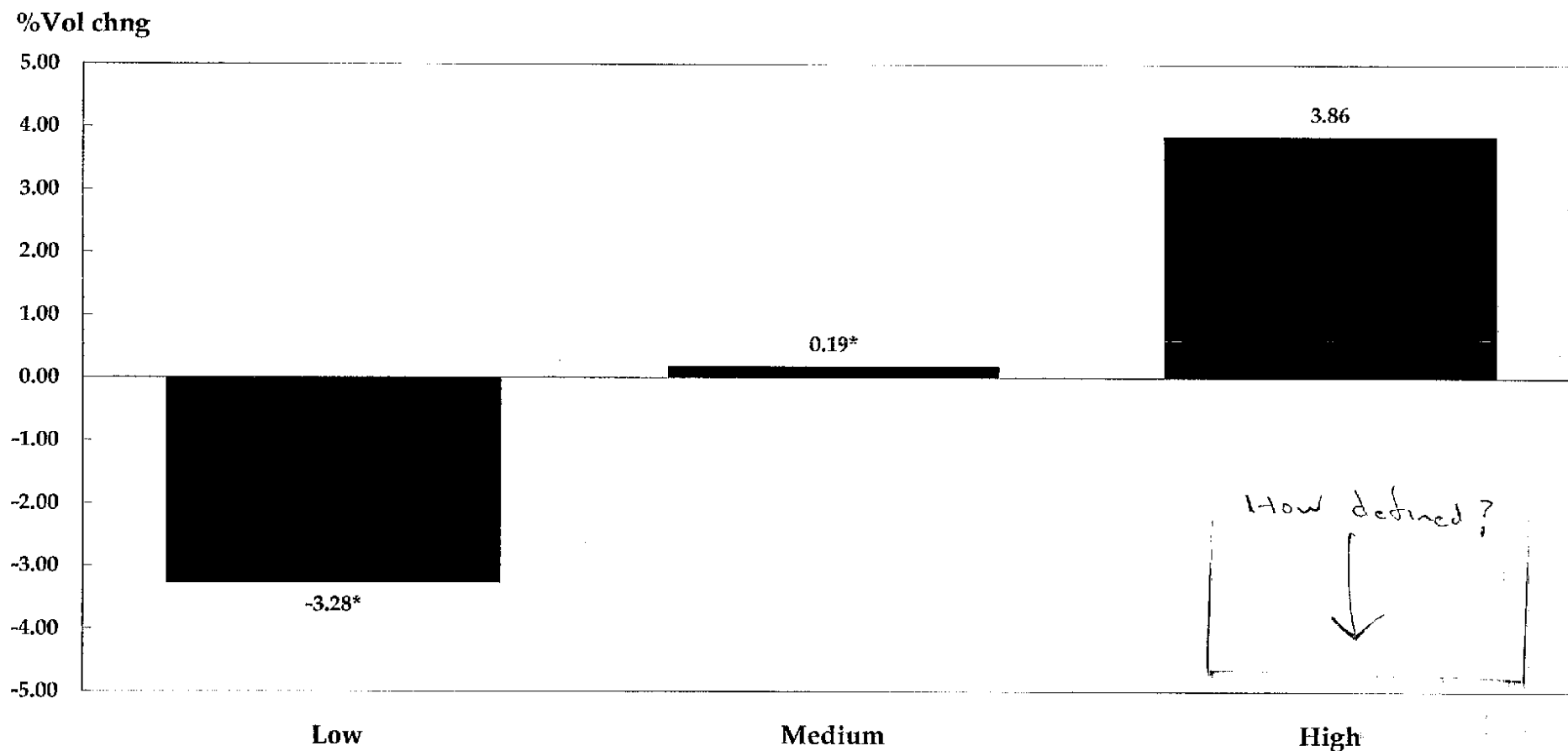
IMPACT OF 99 CENT PRICING

CONTRIBUTION OF BRANDS AT 99 CENTS

- Impact of 99 cent incidence increases with the share contribution of 99¢ brands
- Marlboro loses significant share (.7) when contribution of 99¢ brands is high

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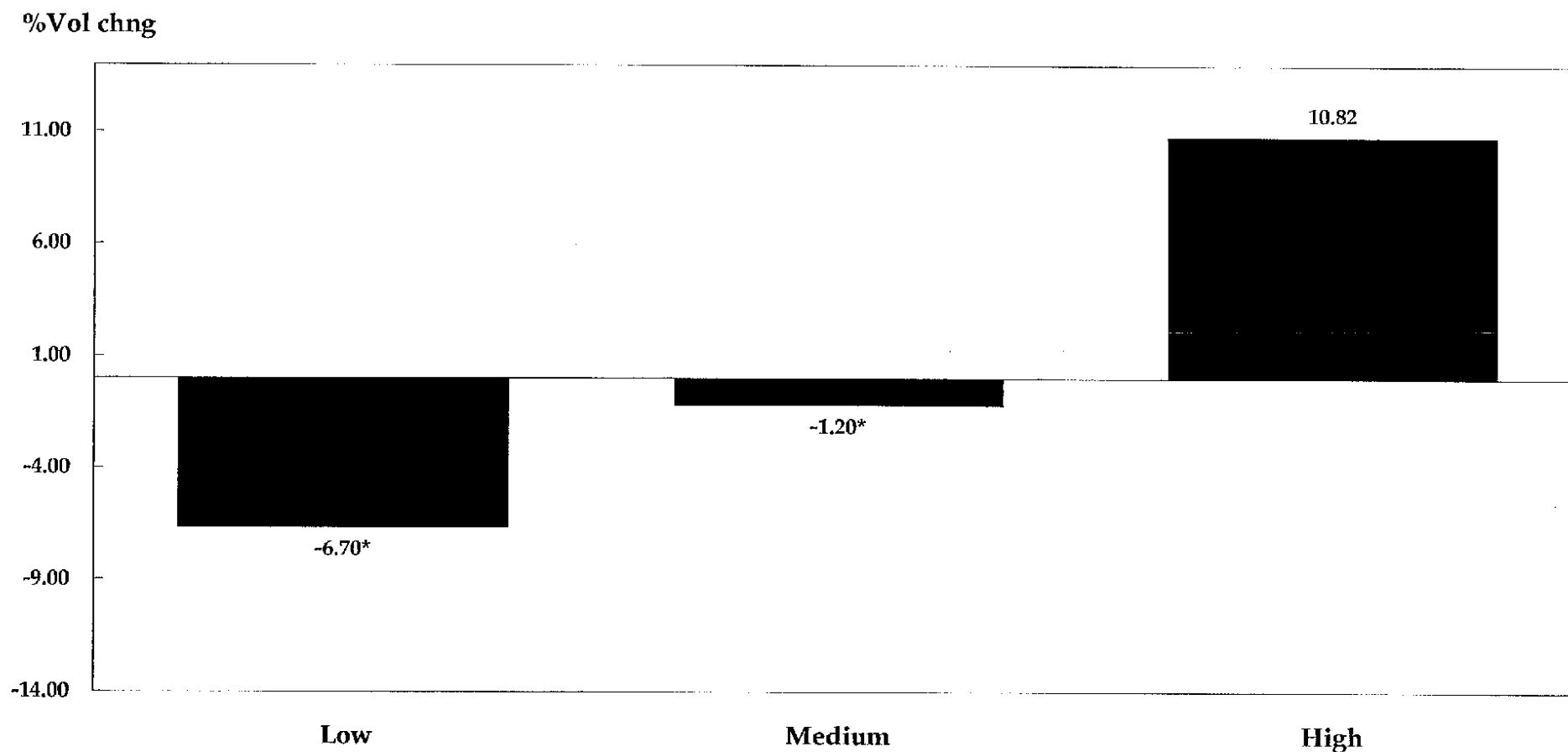
IMPACT OF 99 CENT PRICING TOTAL INDUSTRY VOLUME Percent Volume change by contribution of brands at 99cents



* Statistically insignificant at 90% confidence
Source: Nielsen 450 C-Stores

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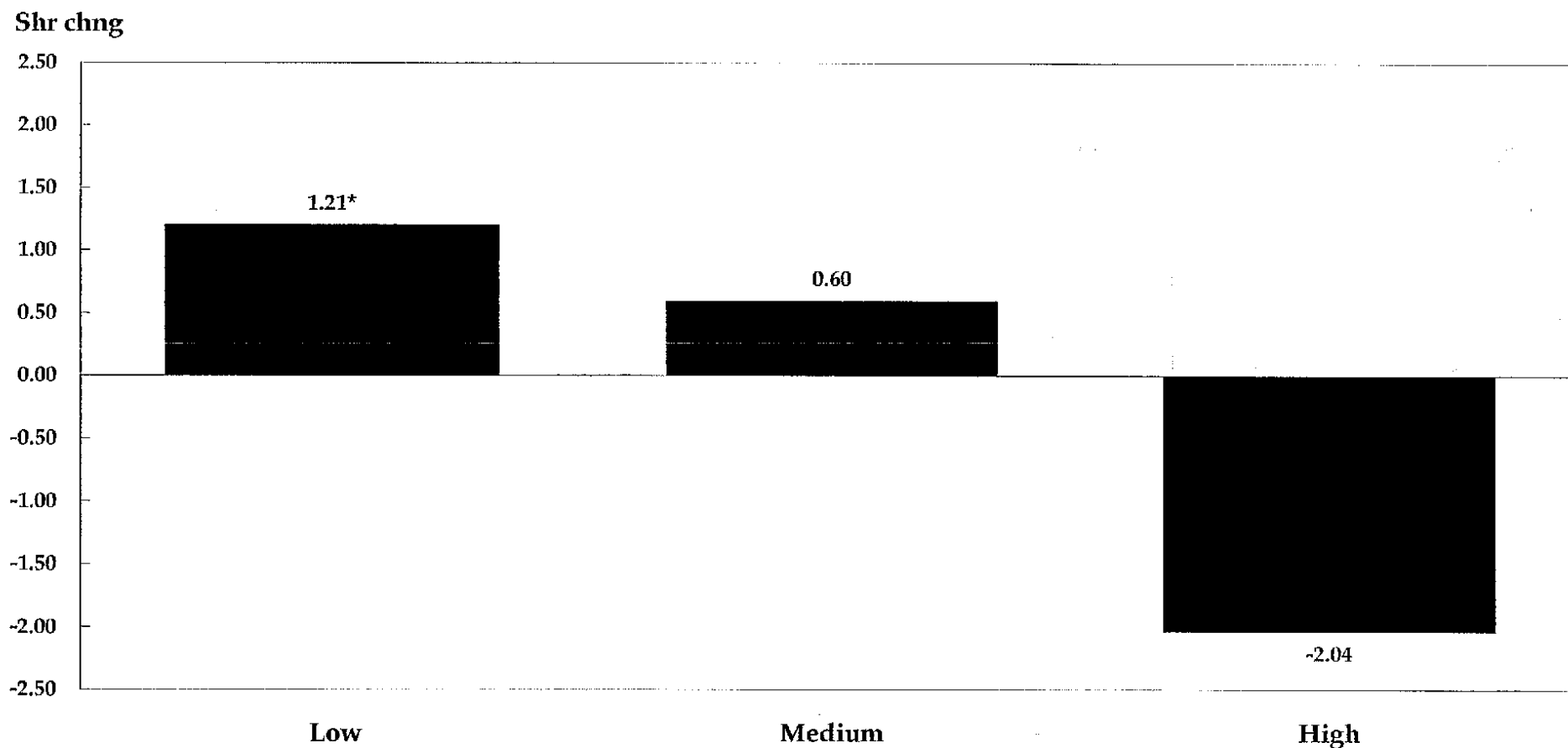
IMPACT OF 99 CENT PRICING TOTAL DISCOUNT VOLUME Percent Volume change by contribution of brands at 99cents



* Statistically insignificant at 90% confidence
Source: Nielsen 450 C-Stores

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**IMPACT OF 99 CENT PRICING
TOTAL PREMIUM SHARE**
Absolute share change by contribution of brands at 99cents

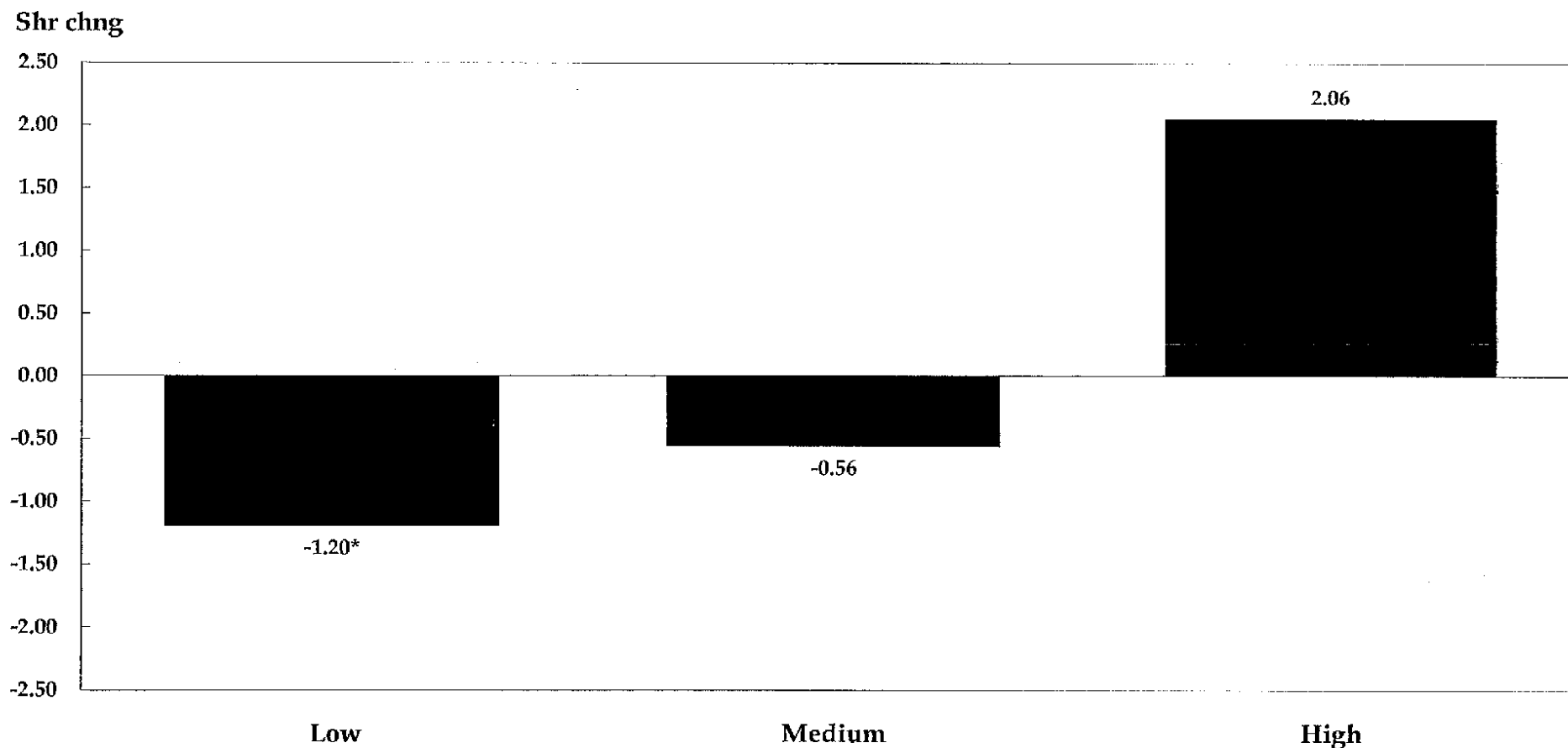


* Statistically insignificant at 90% confidence

Source: Nielsen 450 C-Stores

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IMPACT OF 99 CENT PRICING TOTAL DISCOUNT SHARE Absolute share change by contribution of brands at 99cents

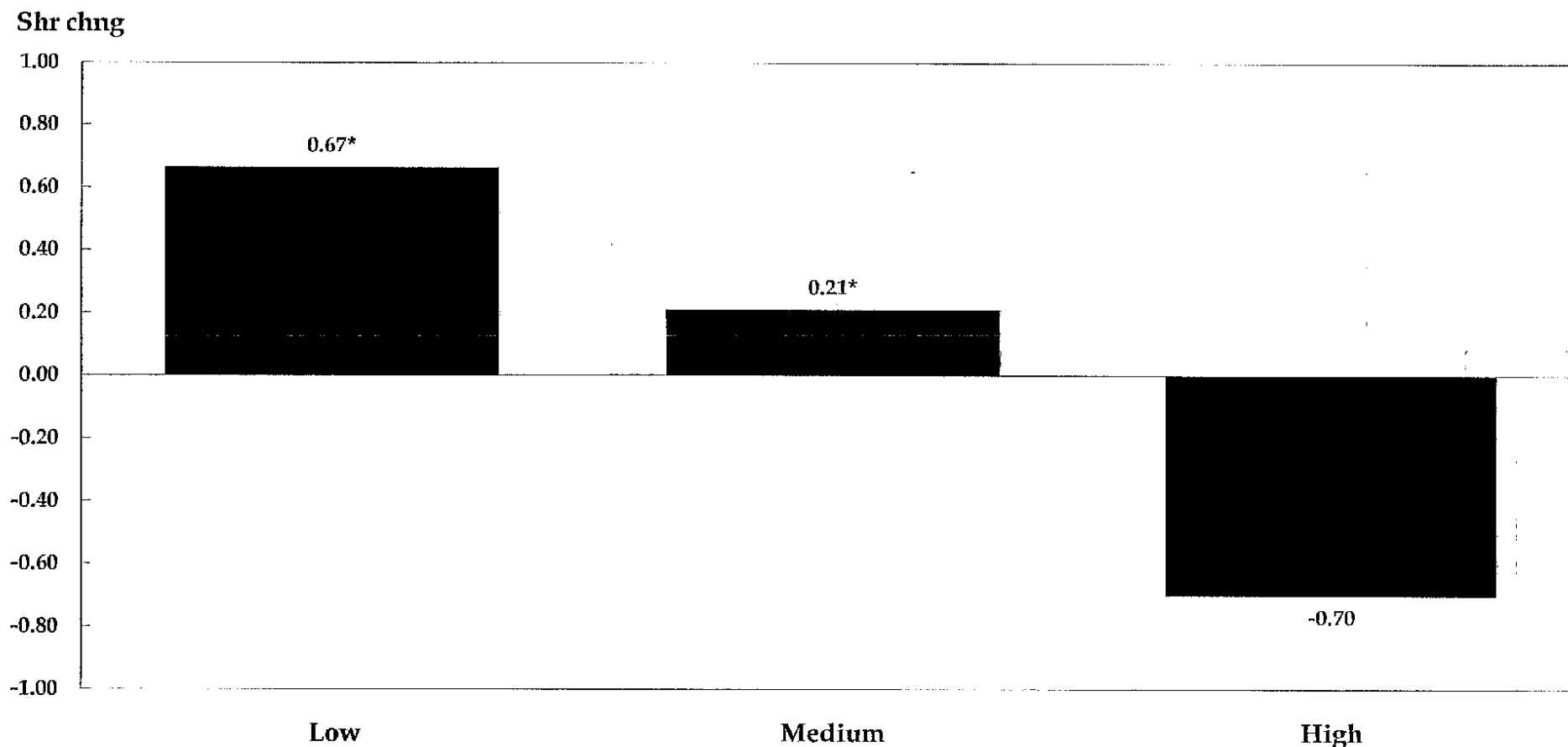


* Statistically insignificant at 90% confidence

Source: Nielsen 450 C-Stores

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**IMPACT OF 99 CENT PRICING
TOTAL MARLBORO SHARE**
Absolute share change by contribution of brands at 99cents

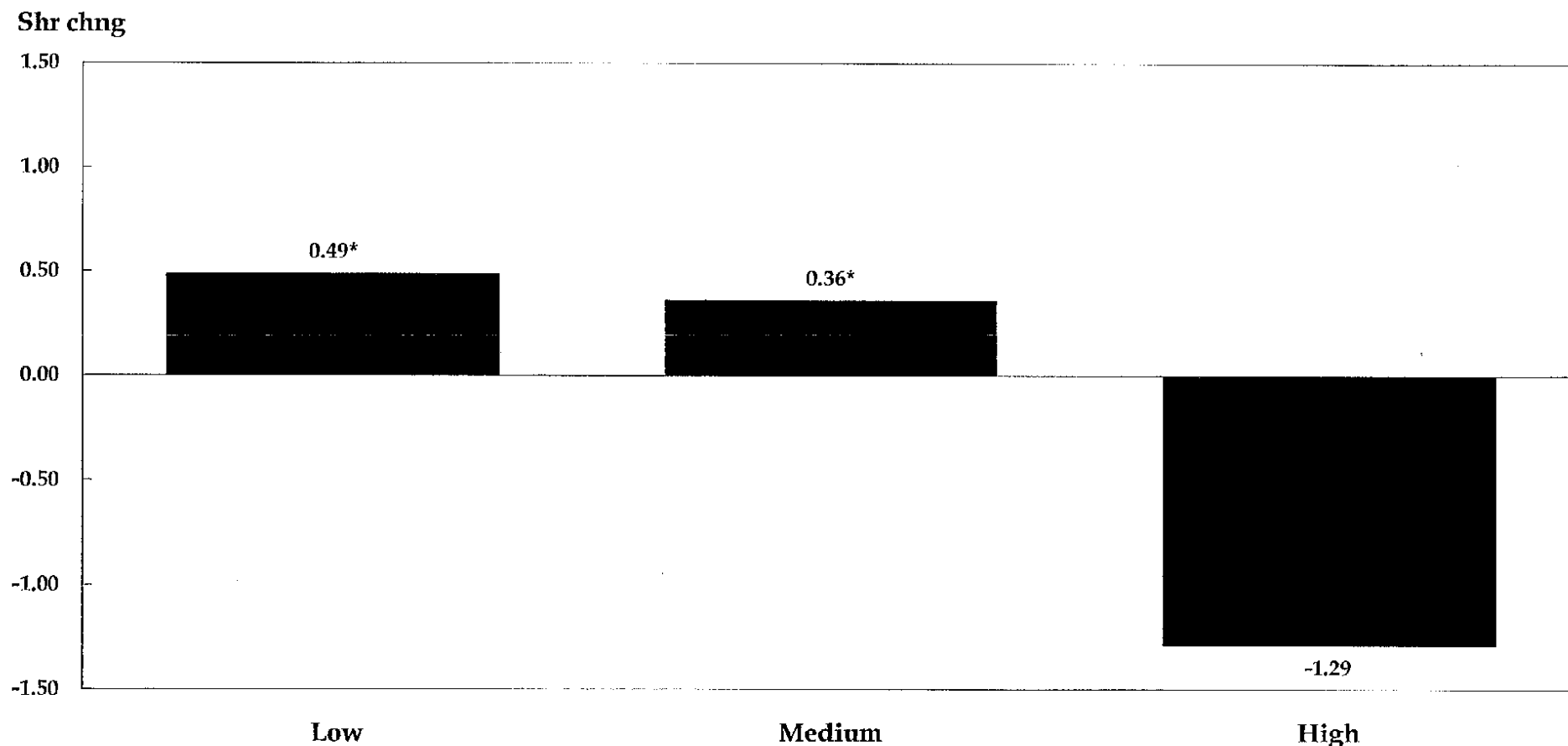


* Statistically insignificant at 90% confidence

Source: Nielsen 450 C-Stores

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IMPACT OF 99 CENT PRICING **TOTAL PREMIUM LESS MARLBORO SHARE** **Absolute share change by contribution of brands at 99cents**



* Statistically insignificant at 90% confidence

Source: Nielsen 450 C-Stores

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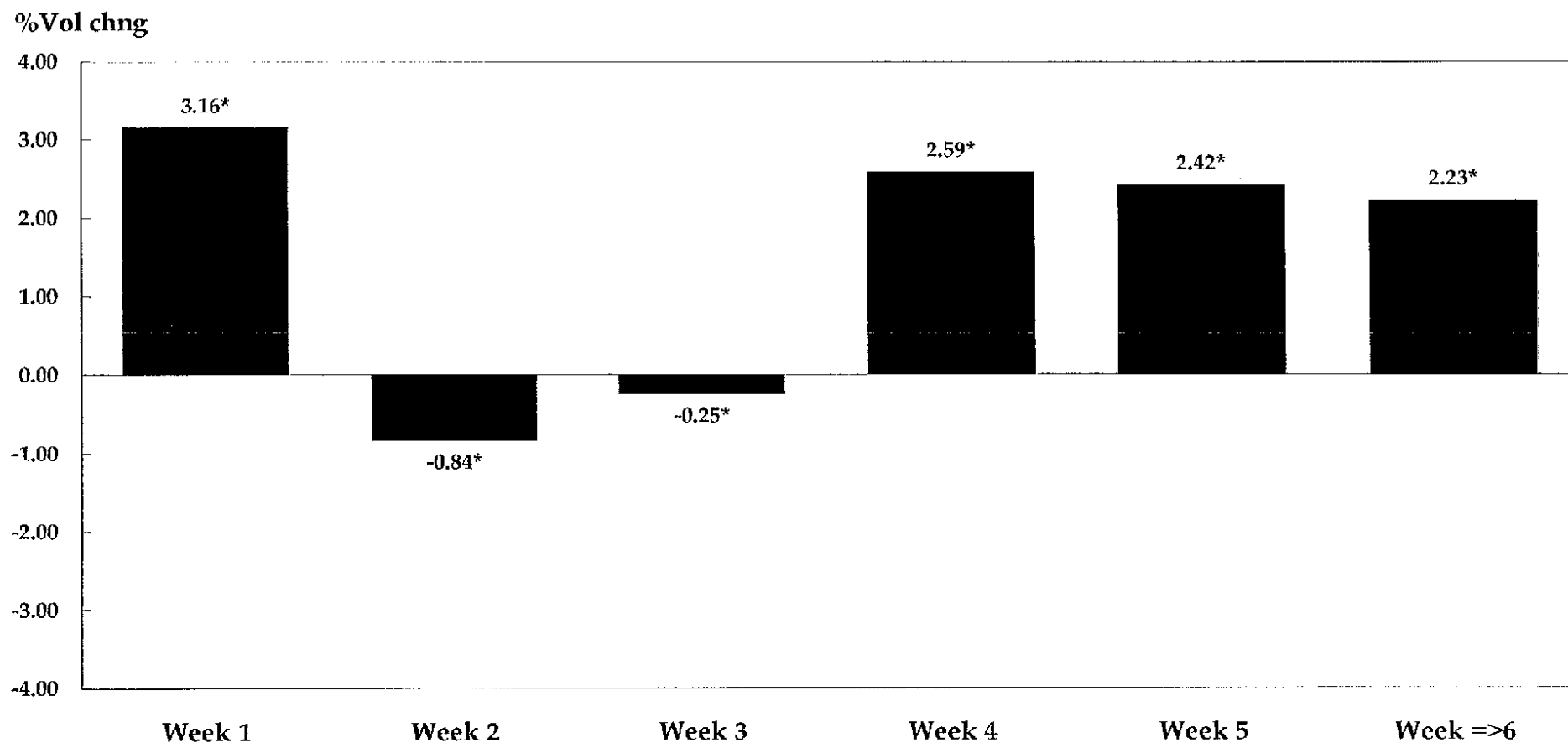
IMPACT OF 99 CENT PRICING

WEEK OF 99 CENT INCIDENCE

- Unclear pattern of volume and share changes over an extended period of 99 cent pricing
- Discount shows an increase in volume/share over the first 5 weeks of 99¢ pricing

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IMPACT OF 99 CENT PRICING TOTAL INDUSTRY VOLUME Percent volume change by week at 99cents

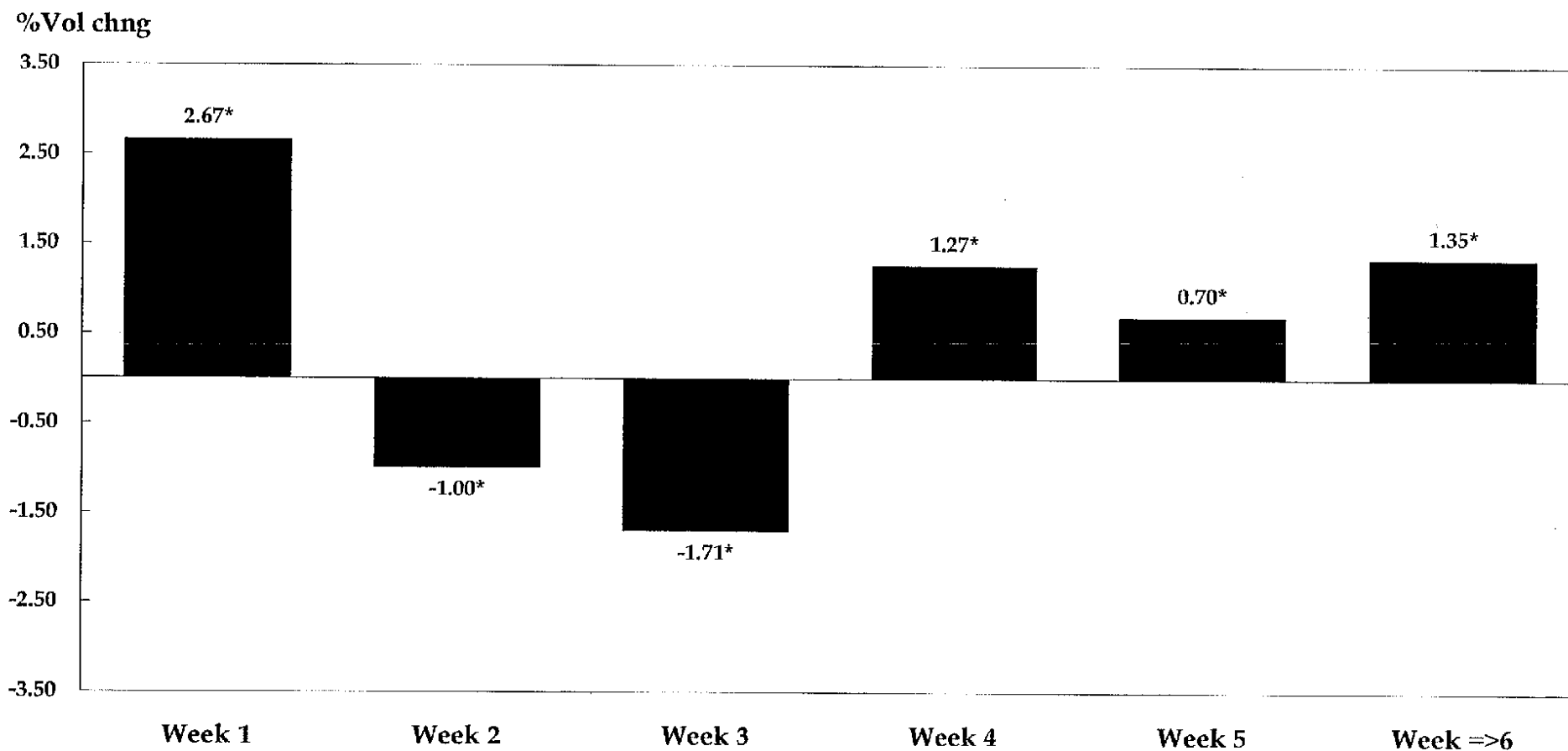


* Statistically insignificant at 90% confidence

Source: Nielsen 450 C-Stores

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IMPACT OF 99 CENT PRICING TOTAL DISCOUNT VOLUME Percent Volume change by week at 99cents

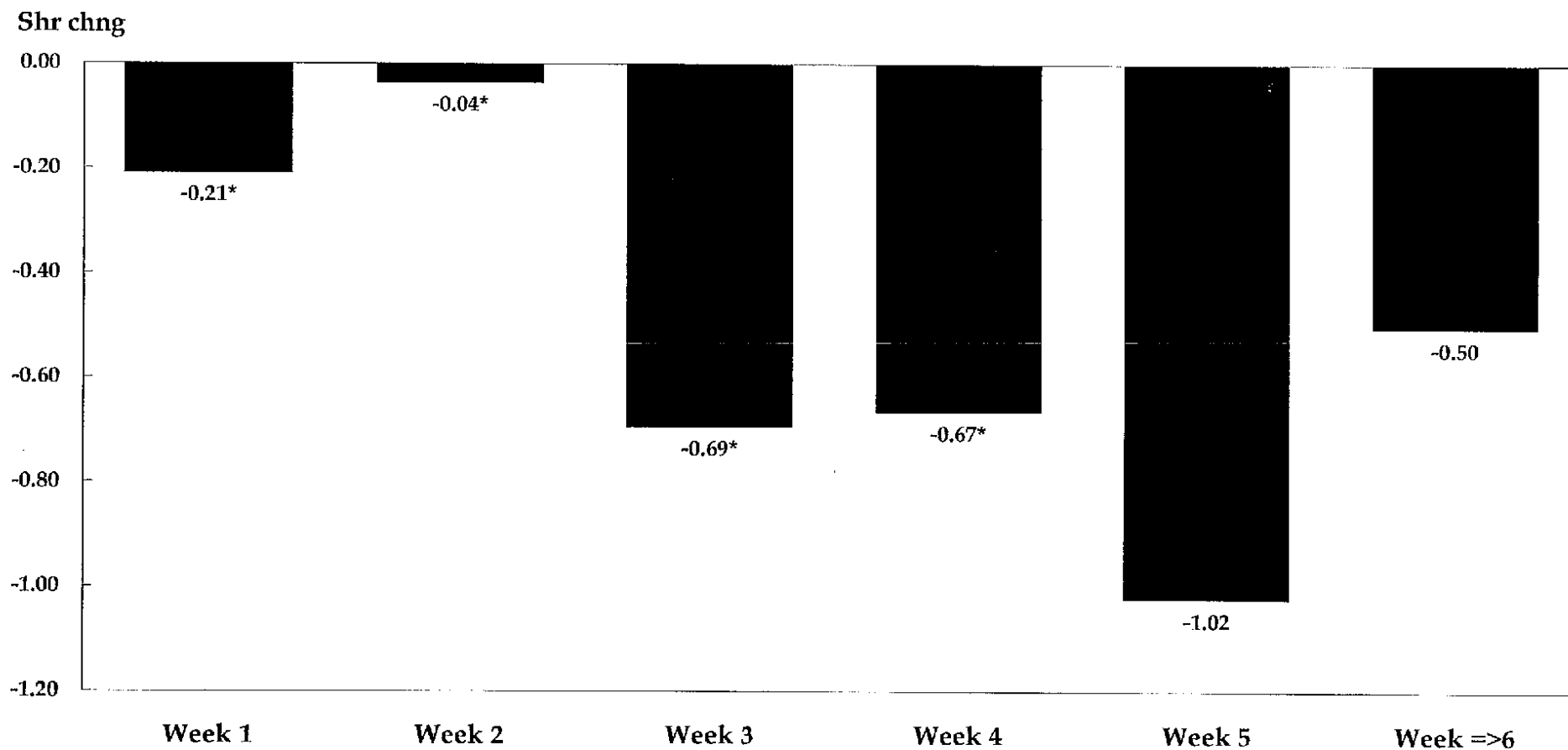


* Statistically insignificant at 90% confidence

Source: Nielsen 450 C-Stores

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IMPACT OF 99 CENT PRICING TOTAL PREMIUM SHARE Absolute share change by weeks at 99cents



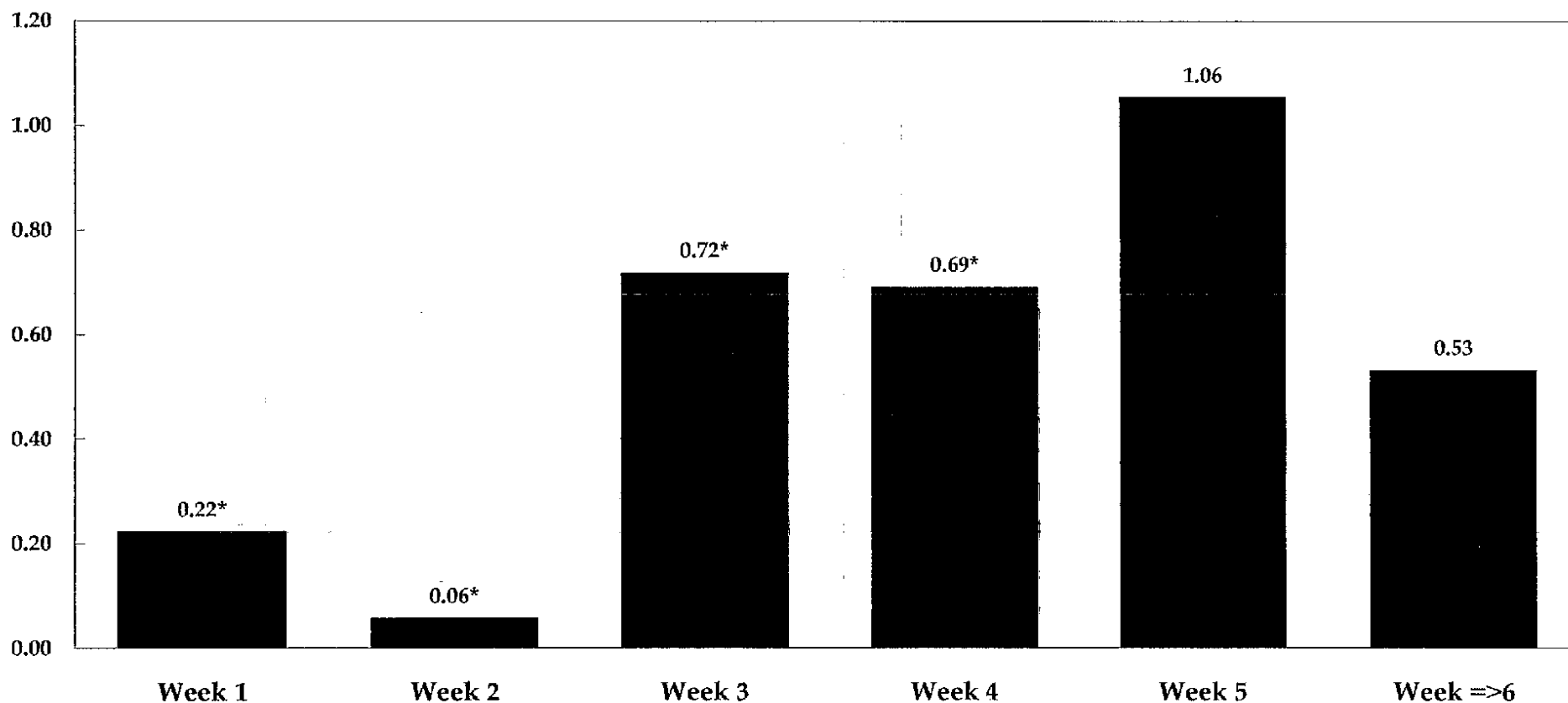
* Statistically insignificant at 90% confidence

Source: Nielsen 450 C-Stores

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IMPACT OF 99 CENT PRICING TOTAL DISCOUNT SHARE Absolute share change by weeks at 99cents

Shr chng



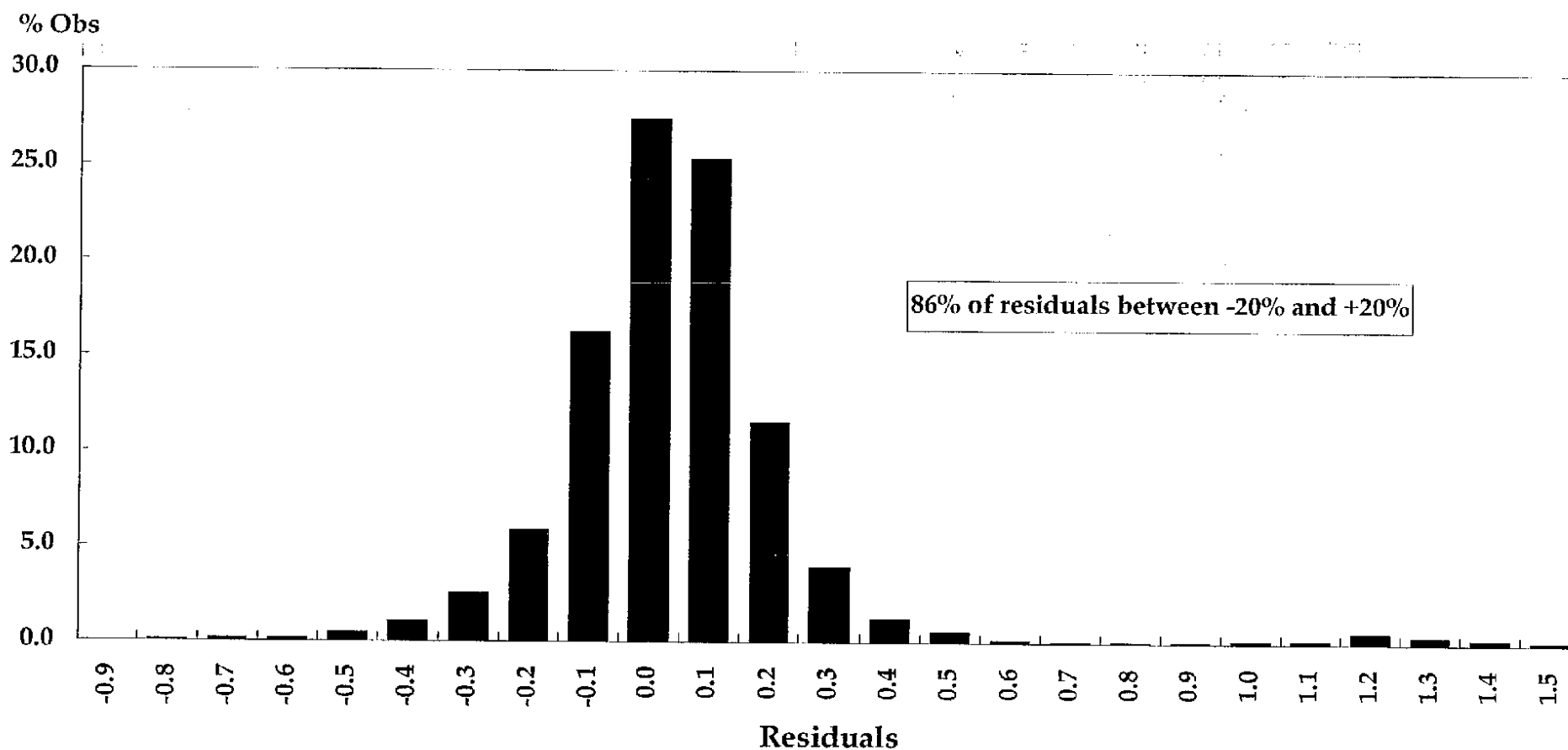
* Statistically insignificant at 90% confidence

Source: Nielsen 450 C-Stores

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IMPACT OF 99 CENT PRICING TOTAL INDUSTRY VOLUME RESIDUALS

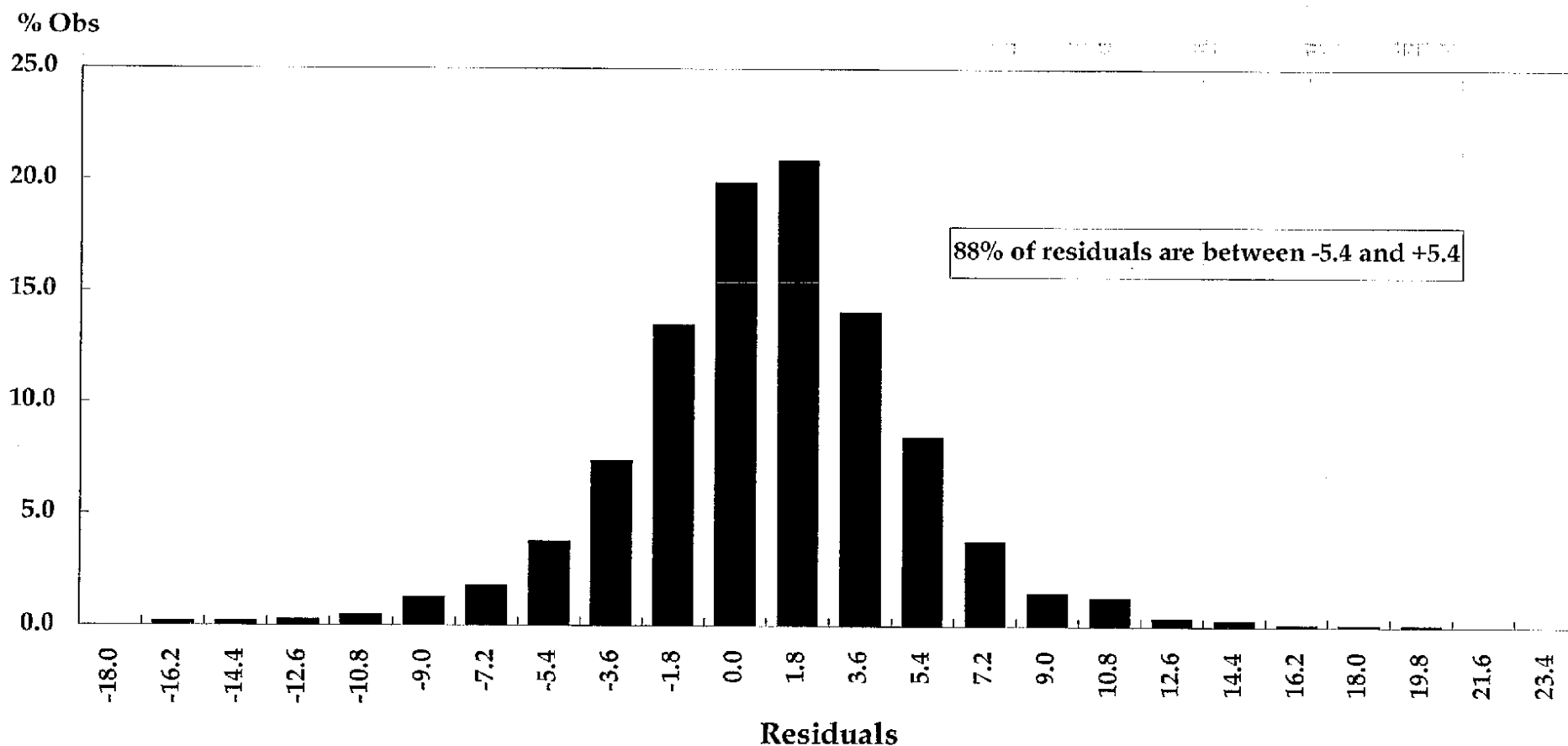


Source: Nielsen 450 C-Stores

Values on the horizontal axis are the maximum values of the interval

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IMPACT OF 99 CENT PRICING TOTAL PREMIUM SHARE RESIDUALS

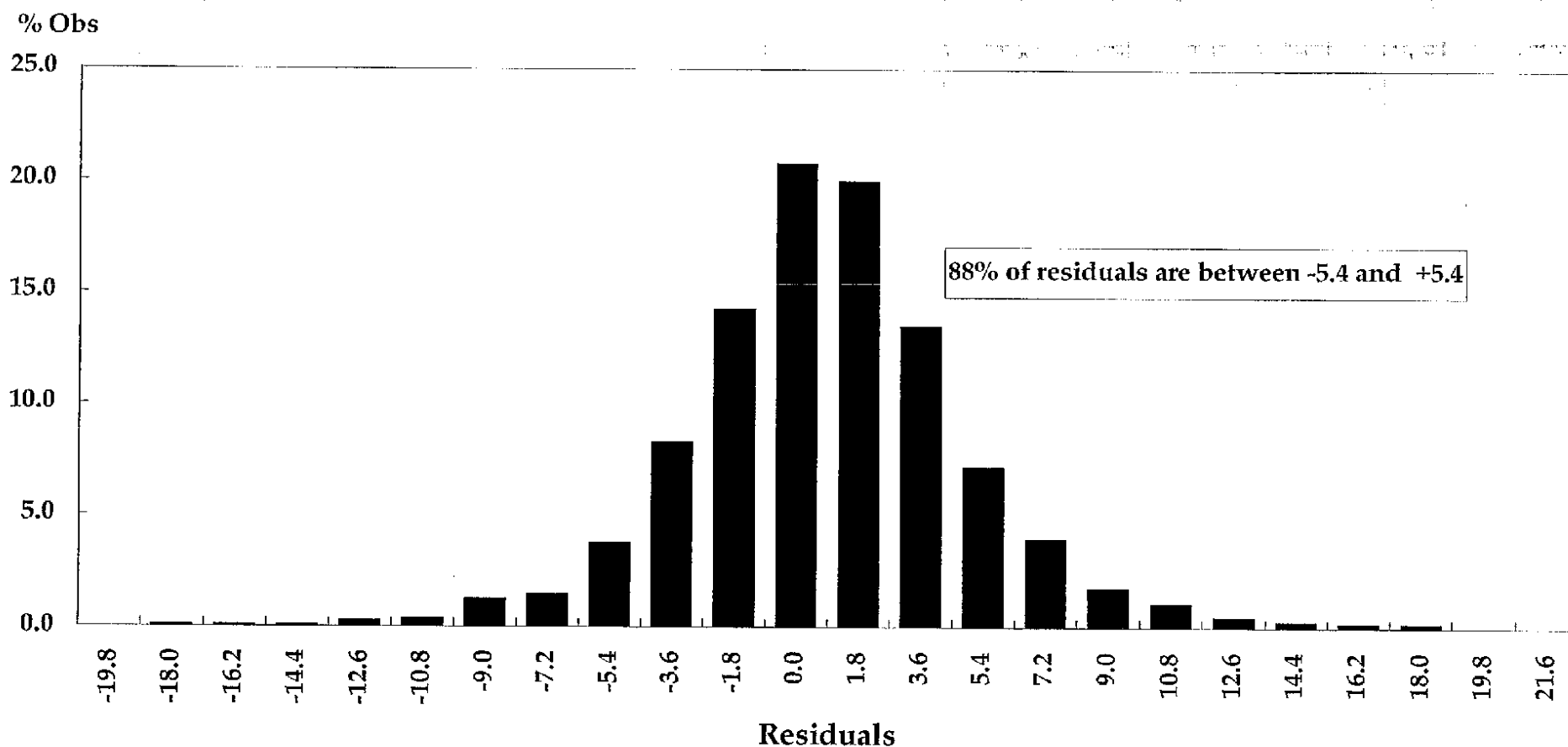


Source: Nielsen 450 C-Stores

Values on the horizontal axis are the maximum values of the interval

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IMPACT OF 99 CENT PRICING TOTAL DISCOUNT SHARE RESIDUALS



Source: Nielsen 450 C-Stores

Values on the horizontal axis are the maximum values of the interval

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NEXT STEPS

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RESIDUAL ANALYSIS (MAID)

- A. Determine what factors discriminate between low and high volume/share changes (shifts) when stores gain 99¢ incidence.
- B. Significant factors could then be incorporated into the regression model
 - Improve accuracy (precision) of "original" estimates
 - Gain information on "new" factors
- C. List of proposed variables for MAID analysis
 - 1. Store Location (region, county)
 - 2. Retail Masters
 - 3. Store size
 - 4. Owner (chain vs. independent)
 - 5. Food convenience vs. gas convenience
 - 6. Discount development
 - 7. Marlboro development
 - 8. Number of discount brands
 - 9. Number of brands promoting (total, prem, Disc)
 - 10. Reduction necessary to achieve 99¢
 - 11. Premium baseline price
 - 12. Discount baseline gap
 - 13. Prem/Disc baseline gap
 - 14. Prem/Lowest net gap

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BRAND LEVEL "SIMULATION"

A. Overall 99¢ impact by brand

- What is the impact on brands that price under 99¢?
- How do brands respond when other brands promote to 99¢ or below?
- Are promotions that cross 99¢ more effective than those that do not?

B. Special case "simulation"

- Is it possible to isolate one to one brand relationships?

Ex: GPC reduces price below 99¢ while Basic does not. What are the share implications on GPC and Basic.

- Is it possible to study special case scenarios?

Ex: How are Basic and Marlboro affected when GPC and Monarch promote?

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99 Cent Incidence

<u>Brand Combination</u>	<u>Num Cases*</u>
Cambridge	154
Doral	109
Cambridge & Doral	26
Misty	34
Style	140
GPC	120
Monarch	67
GPC & Monarch	30
RJR PL	225
PM PL	46
Amer PL	53
Best Value, RJR PL & Amer PL	28
Liggett PL	186
Best Value	29

* Includes only cases where brand (brand combination) is at 99cents and no other brand is at 99 cents

Source: Nielsen 450 C-Stores

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99 Cent Incidence

Brand Combination	Num Cases	Brand Combination	Num Cases	Brand Combination	Num Cases	Brand Combination	Num Cases
Cambridge & Doral	37	Misty & Style	16	Basic & PM PL	0	PM PL & Amer PL	4
Cambridge & Misty	7	Misty & Basic	7	Basic & Amer PL	8	PM PL & Lig PL	7
Cambridge & Style	15	Misty & GPC	23	Basic & Lig PL	1	Amer PL & Lig PL	7
Cambridge & Basic	8	Misty & Monarch	17	GPC & Monarch	68		
Cambridge & GPC	11	Misty & Best Value	6	GPC & Best Value	14		
Cambridge & Monarch	8	Misty & RJR PL	14	GPC & RJR PL	27		
Cambridge & Best Value	8	Misty & PM PL	13	GPC & PM PL	6		
Cambridge & RJR PL	10	Misty & Amer PL	6	GPC & Amer PL	9		
Cambridge & PM PL	2	Misty & Lig PL	1	GPC & Lig PL	11		
Cambridge & Amer PL	7	Style & Basic	5	Monarch & Best Value	17		
Cambridge & Lig PL	0	Style & GPC	16	Monarch & RJR PL	22		
Doral & Misty	22	Style & Monarch	19	Monarch & PM PL	5		
Doral & Style	16	Style & Best Value	11	Monarch & Amer PL	25		
Doral & Basic	11	Style & RJR PL	23	Monarch & Lig PL	8		
Doral & GPC	60	Style & PM PL	4	Best Value & RJR PL	49		
Doral & Monarch	36	Style & Amer PL	11	Best Value & PM PL	2		
Doral & Best Value	18	Style & Lig PL	10	Best Value & Amer PL	47		
Doral & RJR PL	40	Basic & GPC	15	Best Value & Lig PL	25		
Doral & PM PL	15	Basic & Monarch	12	RJR PL & PM PL	24		
Doral & Amer PL	16	Basic & Best Value	9	RJR PL & Amer PL	50		
Doral & Lig PL	11	Basic & RJR PL	12	RJR PL & Lig PL	35		

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99¢ STORES VS. NON 99¢ STORES

Definition: 99¢ store is defined as one having 99¢ incidence at least 75% of the time.

Concern: Can we adjust for enough demographic/geographic factors to truly isolate the effect of a store consistently pricing at 99¢.

**Proposed:
Methodology** Cluster stores into groups based on similar demographic/geographic characteristics and then analyze 99¢ effect for each group.

- Business Issues:**
1. Measure differences in industry volume trends between 99¢ stores and non 99¢ stores.
 2. Quantity level differences in premium/discount shares for the two store types.
 3. If possible, study Basic share implications for various 99¢ situations.
 - A. Basic share in 99¢ stores where Basic is greater than 99¢ vs. stores where 99¢ pricing does not exist.
 - B. Basic share in 99¢ stores where Basic is also less than 99¢ vs. stores where 99¢ pricing does not exist
 - Basic only at 99¢
 - Basic and others at 99¢

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APPENDIX

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IMPACT OF 99 CENT PRICING

% Volume Change Due to 99¢ incidence

Industry	2.12%
Premium	.97%*
Discount	3.87%
Marlboro	1.67%*
Premium less Marlboro	.8%

* Statistically insignificant at 90% confidence level

Source: Nielsen 450 C-Stores

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IMPACT OF 99 CENT PRICING

Share Change Due to 99¢ Incidence

Premium	-.51
Discount	.53
Marlboro	-.08*
Premium less Marlboro	-.42

* Statistically insignificant at 90% confidence level
Source: Nielsen 450 C-Stores

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IMPACT OF 99 CENT PRICING

% Volume Change By Number of Brands at 99 Cents

	NUMBER OF BRANDS		
	<u>1</u>	<u>2</u>	<u>≥3</u>
# of Cases	1156	230	111
Industry	1.13%*	6.65%	9.19%
Premium	.38%*	5.82%	4.20%*
Discount	2.88%	7.81%	17.46%
Marlboro	1.01%	7.39%*	4.7%
Premium less Marlboro	.18%	5.88%*	4.02%

* Statistically insignificant at 90% confidence level

Source: Nielsen 450 C-Stores

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IMPACT OF 99 CENT PRICING

Share Change By Number of Brands at 99 Cents

	NUMBER OF BRANDS		
	<u>1</u>	<u>2</u>	<u>≥3</u>
# of Cases	1156	230	111
Premium	-.39	-.27*	-2.88
Discount	.41	.30*	2.89
Marlboro	-.14*	-.06*	-1.27*
Premium less Marlboro	-.28	-.26	-1.77

* Statistically insignificant at 90% confidence level
Source: Nielsen 450 C-Stores

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IMPACT OF 99 CENT PRICING

% Volume Change By Contribution of Brands at 99¢

	CONTRIBUTION		
	<u>Low</u>	<u>Medium</u>	<u>High</u>
# of Cases	97	575	804
Industry	-3.28%*	.19%*	3.86%
Premium	-1.7%*	1.06%*	.47%*
Discount	-6.7%*	-1.2%*	10.82%
Marlboro	.61%*	.89%*	1.23%*
Premium less Marlboro	-2.04%*	1.38%*	.21%*

* Statistically insignificant at 90% confidence level

Source: Nielsen 450 C-Stores

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IMPACT OF 99 CENT PRICING

% Volume Change By Contribution of Brands at 99¢

	CONTRIBUTION		
	<u>Low</u>	<u>Medium</u>	<u>High</u>
# of Cases	97	575	804
Premium	1.21*	0.60	-2.04
Discount	-1.20*	-.56	2.06
Marlboro	.67*	.21*	-.70
Premium less Marlboro	.49*	.36*	-1.29

* Statistically insignificant at 90% confidence level
Source: Nielsen 450 C-Stores

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IMPACT OF 99 CENT PRICING

% Volume Change By Week of 99¢ Incidence

	WEEK					
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>
# of Cases	239	175	139	123	106	726
Industry	3.16%*	-.84%*	-.25%*	2.59%*	2.42%*	2.23%*
Premium	2.67%*	-1.0%*	-1.71%*	1.27%*	0.7%*	1.35%*
Discount	4.03%	0	2.09%*	5.31%	6.02%	4.3%

* Statistically insignificant at 90% confidence level

Source: Nielsen 450 C-Stores

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IMPACT OF 99 CENT PRICING

Share Change By Week of 99¢ Incidence

	WEEK					
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>
# of Cases	239	175	139	123	106	726
Premium	-.21*	-.04*	-.69*	-.67*	-1.02	-.50
Discount	.22*	.06*	.72*	.69*	1.06	.53

* Statistically insignificant at 90% confidence level
Source: Nielsen 450 C-Stores

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99 Cent incidence by brand

Brand	Num Cases
Cambridge	199
Doral	226
Misty	68
Style	213
Basic	35
GPC	230
Monarch	155
Best Value	96
RJR PL	347
PM PL	89
Amer PL	105
Lig PL	252

Source: Nielsen 450 C-Stores

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Percent Pack Price Gap
Current Gap \geq 96%

Store Number	Masters/ Non	Region	Section	State	Chain/ Ind	CPW	County
54670	Y	2	21	WV	Chn \geq 200	C	
54992	Y	2	21	VA	Chn \geq 200	B	
54609	Y	2	22	NC	Chn $<$ 200	C	
54696	Y	2	22	NC	Chn $<$ 200	B	
54697	Y	2	22	SC	Chn \geq 200	B	
54908	N	2	22	SC	Chn \geq 200	C	
55949	Y	2	22	NC	Chn $<$ 200	C	
57926	Y	2	22	NC	Ind $<$ 200	C	
54672	Y	2	23	KY	Chn \geq 200	D	
54698	Y	2	23	FL	Chn $<$ 200	B	
54978	Y	2	23	KY	Chn \geq 200	D	
55642	N	2	23	FL	Chn $<$ 200	B	
55623	Y	3	32	LA	Chn \geq 200	B	
54680	Y	3	33	KS	Chn \geq 200	A	
55616	Y	3	35	TX	Chn $<$ 200	B	
55987	Y	4	43	IN	Chn \geq 200	B	
55628	Y	5	52	AZ	Chn \geq 200	A	
55630	Y	5	52	AZ	Chn \geq 200	A	
55631	Y	5	52	AZ	Chn $<$ 200	A	
55636	Y	5	52	AZ	Chn $<$ 200	B	
55921	N	5	52	AZ	Chn $<$ 200	B	

CHANGE - 10/22 vs June:

25.7% (88) gap decreased
 34.5% (118) gap remained stable
 39.8% (136) gap increased

Average Gap:

June: 46.43%
 10/22: 50.63%
 *10/22: 46.86%

*Excluding gaps \geq 96%.

\Rightarrow Weighted volume gap
 w/E 10/22/94

Jennifer,

Please see me to discuss.

Thanks,

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